International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 04, April 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

A MECHANISM DESIGN APPROACH FOR EFFICIENT AND RELIABLE RESOURCE PROCUREMENT IN CLOUD COMPUTING

Prof:Pranjali Hapase[1] , Sonali Dhawale[2] , Prashant Kolage[3]

[1,2,3]Department of Information Technology Engineering,

Genba Sopanrao Moze College of Engineering,Balewadi,Pune(India)

ABSTRACT

A cloud resource procure approach that not solely automates the choice of Associate in Nursing applicable cloud marketer however conjointly implements dynamic rating. 3 potential mechanisms square measure recommended for cloud resource procurement: cloud-dominant strategy incentive compatible (C-DSIC), cloud-Bayesian incentive compatible (C-BIC), and cloud optimum (C-OPT). A sale module for a cloud broker which may implement C-DSIC, C-BIC, or C-OPT to perform resource procure in a very cloud computing context. A cloud broker with such a sale module allows users to alter the selection of a cloud marketer among several with various offerings, and is additionally an important opening toward implementing dynamic rating within the cloud. If the cloud user isn't happy with the resource availableness, he will re request the cloud broker for different cloud. Then the cloud broker can send all the specification once more to the cloud vendors. then all the 3 potential algorithms for cloud resource procurement: cloud-dominant strategy incentive compatible (C-DSIC), cloud-Bayesian incentive compatible (C-BIC), and cloud optimum (C-OPT) can be reapplied by the cloud broker on the remaining clouds .And once more the simplest cloud from the remaining clouds are designated and declared as winner. Then once more the winner is shipped to the cloud user. Within the existing system solely the value and quality of the cloud is taken into account, however within the projected system can add another issue of your time length.

Keywords: Cloud computing, mechanism design, cloud broker, resource procurement, reverse auctions.

I. INTRODUCTION

Storage outsourcing is turning into additional and additional enticing to each trade and tutorial because of the benefits of low value, high accessibility, and straightforward sharing. Collectively of the storage outsourcing forms, cloud storage gains wide attention in recent years. Several firms, like Amazon, Google, and Microsoft, give their own cloud storage services, wherever users will transfer their files to the servers, access them from varied devices, and share them with the others. Though cloud storage services are wide adopted in current days, there still stay several security problems and potential threats .Data integrity is one among the foremost vital properties once a user outsources its files to cloud storage. Users ought to be convinced that the files keep within

ISSN (O) 2454-9665
ISSN (P) 2454-0663

the server don't seem to be tampered. Ancient techniques for safeguarding knowledge integrity, like message authentication codes (MACs) and digital signatures need users to transfer all of the files from the cloud server for verification that incurs a significant communication value. These techniques don't seem to be appropriate for cloud storage services wherever users could check the integrity oftentimes, like each hour. Thus, researchers introduced Proof of Storage (Poss) for checking the integrity while not downloading files from the cloud server. What is more, users may need many dynamic operations, like modification, insertion, and deletion, to update their files, whereas maintaining the potential of Poss. Dynamic Poss is projected for such dynamic operations. In distinction with Poss, dynamic Poss employ structures, like the Merle tree. Thus, once dynamic operations are dead, users regenerate tags (which are used for integrity checking, like MACs and signatures) for the updated blocks solely, rather than create for all blocks. To rose perceive the subsequent contents. We tend to gift additional details concerning Poss and dynamic Poss. In these schemes, every block of a file is hooked up a (cryptographic) tag that is employed for substantiating the integrity of that block. Once a champion desires to ascertain the integrity of a file, it every which way selects some block indexes of the file, and sends them to the cloud server. Consistent with these challenged indexes, the cloud server returns the corresponding blocks beside their tags. The champion checks the block integrity and index correctness. The previous are often directly bonded by cryptanalytic tags. a way to affect the latter is that the major distinction between Poss and dynamic Poss In most of the Poss schemes, the block index is “encoded” into its tag, which implies the champion will check the block integrity and index correctness at the same time. However, dynamic Poss cannot cipher the block indexes into tags, since the dynamic operations could modification several indexes of non-updated blocks that incur reserve computation and communication value. As an example, there's a file consisting of one thousand blocks, and a replacement block is inserted behind the second block of the file. Then, 998 block indexes of the first file are modified, which implies the user should generate and send 999 tags for this update. Structures are introduced in dynamic Poss to unravel this challenge. As a result, the tags are hooked up to the structure instead of the block indexes .However, dynamic Poss remains to be improved in an exceedingly multi-user atmosphere, because of the necessity of cross-user American state duplication on the client-side. This means that users will skip the uploading method and acquire the possession of files now, as long because the uploaded files exist already within the cloud server. This method will cut back space for storing for the cloud server, and save transmission information measure for users. To the simplest of our data, there are no dynamic Poss that may support secure cross-user American state duplication. Dynamic analysis can increase user welfare, facilitates healthy competition among vendors, and can increase the efficiency of cloud resource usage. Auctions unit a method of implementing dynamic analysis. Dynamic analysis is not only advantageous for cloud users but collectively maximize the profit for vendors. The mechanisms planned throughout this paper unit supported reverse auctions and unit further applicable for implementing dynamic analysis. The procurance module permits the cloud broker to automatism resource procurance . In our procurance module, the user sends the specifications to the cloud broker and requests for resources. The cloud broker sends the user specification to any or all cloud vendors. The cloud vendors respond with price and QoS parameters of their services. We tend to tend to do not have confidence implementation issues like caching, refresh, and so on, important and QoS by the broker. The cloud broker assigns weights for numerous QoS parameters exploitation analytic hierarchy methodology (AHP), that unit scaled before computing a weighted QoS score. This step is termed

ISSN (O) 2454-9665
ISSN (P) 2454-0663

standardization. If standardization is not done, then it's not possible to match altogether completely different QoS specifications .The cloud broker implements one in all cloud-dominant strategy incentive compatible (C-DSIC), cloud-Bayesian incentive compatible (C-BIC), or cloud-optimal (C-OPT) mechanisms. The winner is ready supported the mechanism enforced. The cloud broker notifies every winner and user. Finally, the cloud broker pays money to the cloud vendors to keep with the payment perform of the mechanism. This may be called the procurance price.

Most cloud vendors utilize the pay-as-you-go model. The default understanding offered by a marketer of times contractually advantages the bourgeois but not the patron, conveyance concerning confound with shopper conditions. Consequently, this kind of estimating favours the cloud marketer. Likewise, there is not any clear duty on SLAs. Half valuing is the declare these type of issues. Half valuing builds shopper welfare, encourages solid competition among merchants, and expands the productivity of cloud quality use. Barters are one methodology for actualizing dynamic evaluating. Half evaluating is valuable for cloud shoppers however as augments the profit for merchants. The systems projected throughout this paper depend upon opposite barters and are further fitting for executing half evaluating. The feat module empowers the cloud bourgeois to robotize quality acquisition. In our acquisition module, the patron sends the determinations to the cloud negotiate and demands for assets. The cloud negotiate sends the patron determination to any or all cloud merchants. The cloud merchants react with expense and QoS parameters of their administrations. We tend to don't take into consideration execution issues like storing, invigorate, et cetera, of expense and QoS by the representative. The cloud dealer doles out weights for various QoS parameters utilizing investigative order methodology (AHP), that ar scaled before reckoning a weighted QoS score. This stride is termed standardization. Among the event that standardization is not done, so it's most underneath no circumstances conceivable to put confidence in distinctive QoS particulars. The cloud agent executes one in all cloud-overwhelming methodology motive smart (C-DSIC), cloud-Bayesian motivating force sensible (C-BIC), or cloud-ideal (C-OPT) components. The champ is resolved visible of the half dead. The cloud agent advises every champ and shopper. At long last, the cloud agent pays cash to the cloud merchants as per the installment capability of the instrument. This is {often|this can be} often noted because the feat worth.

We performed tests in two things to traumatize the absence of traditional QoS disseminations among the association of cloud computing. Among the initial situation, costs are log usually disseminated and QoS parameters are consistently disseminated. Among the second situation, worth is log usually disseminated, the' QoS qualities are distributed typically. The feat worth {for every for every} half in each situation is computed among the neck of the woods of distinctive cloud merchants. We tend to tend to watched that the attainment expense diminishes as a result of the vary of cloud sellers increments. To boot, the acquisition expense is lower in C-BIC contrasted with alternate components. The attainment worth in C-OPT is somewhat quite C-DSIC, with the exception of very not terribly many cases. The attainment worth in C-OPT depends on upon the expense valuation of the patron.

II. RELATED WORK

2.1 CLOUD BROKER: BRINGING INTELLIGENCE INTO THE CLOUD AN EVENT-BASED APPROACH

Author: Stella Gaze Grivas, Tripathi Uttar Kumar, Holder Wace

ISSN (O) 2454-9665
ISSN (P) 2454-0663

Taking care of changes of massive business procedures, mix in Nursing making whereas not a doubt frameworks unit up associate degree following an fine-tuning among the business technique with least amount of your time some of things} that has been of enthusiasm to scientists for long and there square measure many methodologies planned for it. With Cloud registering on the point of be with time normal organization want associate degree in vary construction for cloud primarily based execution which can injure change administration of forms. Throughout this paper author is propose associate degree change administration approach for cloud sponsored business procedure models.

2.2 A Decision Support System for Moving Workloads to Public Clouds

Author: Mohammad Faro Mithani, Michael A. Salsburg , Ph.D.

The current financial setting is convincing CxOs to look for higher IT plus use with a particular finish goal to induce a lot of esteem from their IT ventures and utilize existing foundation to bolster developing business requests. A way to get a lot of from less a way to utilize the assets The foremost effective technique to boost come On Investment (ROI) to remain useful and alter the IT expense focus into a profit focus? These inquiries are presently being thought-about in light-weight of developing 'Open Cloud Computing' administrations. Distributed computing could be a model for empowering plus designation to part business workloads in a very continuous manner from a pool of free assets in a very financially savvy manner. Giving plus on interest at financially savvy estimating is by all account not the sole criteria whereas deciding within the event that a business administration work will be affected to Associate in Nursing open cloud. Therefore what else should Coos think about before they move to public cloud situations there's a requirement to approve the business applications Associate in Nursing workloads as way as specialized transportability and business requirements/compliance with the goal that they will be sent into an open cloud while not in depth customization.

2.3 RESERVOIR – When one cloud is not enough

Author: Benny Rochwerger, Johan Torsion, Carmelo Ragusa, David Brigand

As cloud computing looks to be extra prevailing, the matter of ability has completed up basic for cloud computing suppliers. The cloud worldview is appealing in light-weight of the actual fact that it offers associate emotional decrease in capital and operation costs for purchasers. In any case, as a result of the interest for cloud services expands, the following increments in expense and elaborateness for the cloud supplier may get to be unendurable. Author quickly remark the advancements we tend to tend to created beneath the RESERVOIR European analysis venture to cloud suppliers manage many-sided quality and adaptability issues. Author is likewise gift the thought of a unified cloud which may comprise of some of cloud suppliers joined by common joint effort understandings. A united cloud can manage state issues in associate extremely price effective approach. Suppliers inside the organization World Health Organization have abundance limit can impart their base to individuals needing extra assets.

2.4 Applications of flexible pricing in business-to-business electronic commerce Author: King, A.J.

The additional and additional dynamic nature of business-to-business electronic commerce has created a recent shift aloof from mounted rating and toward versatile rating. versatile rating, as made public here, includes every differential rating, throughout that entirely totally different completely different} shoppers would possibly receive different prices supported expected valuations, and dynamic-pricing mechanisms, like auctions, where

ISSN (O) 2454-9665
ISSN (P) 2454-0663

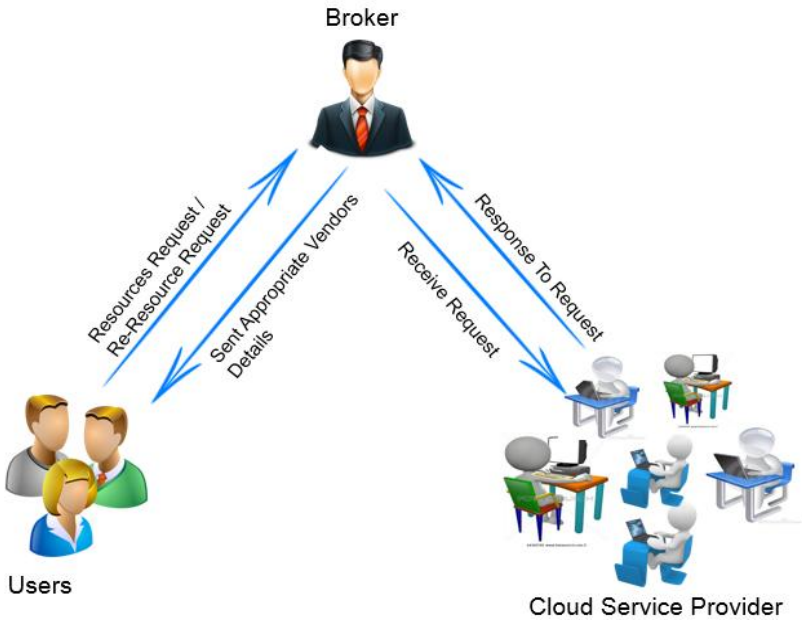
prices and conditions are supported bids by market participants. Throughout this paper we tend to tend to survey ongoing add versatile rating inside the context of the provision chain, along with revenue management, procurance, and supply-chain coordination. We tend to tend to review negotiation mechanisms for acquisition, along with improvement approaches to the analysis of sophisticated, multidimensional bids. We tend to tend to in addition discuss several applications of versatile rating on the sell side, along with rating ways that for response to requests for quotes, dynamic rating throughout a reverse activity application, and rating inside the rising house of hosted applications services. We tend to tend to conclude with a discussion of future analysis directions throughout this quickly growing house.

2.5 Dynamic pricing models for electronic business

Author: Y NARAHARI, CVL RAJU, K RAVIKUMAR and SOURABH SHA

Dynamic rating is that the dynamic alteration of costs to purchaser's obsessed with the quality these purchasers choose to degree item or administration. today's processed economy is prepared for half valuing; however late analysis has appeared that the costs will ought to be balanced in genuinely stylish routes, visible of sound numerical models, to infer the advantages of dynamic evaluating. This text endeavours to review distinctive models that square measure used as a vicinity of dynamic evaluating. Author to begin with persuade half evaluating and gift hidden ideas, with some examples, and clarify conditions below that dynamic evaluating is at risk of succeed. Author at that point delay the {part offal half of} models in calculation part costs. The models surveyed incorporate stock primarily based models, data driven models, barters, and machine learning. Author show a detailed example of degree e sector to demonstrate the employment of fortification learning in dynamic rating.

III. PROPOSED SYSTEM



3.1System Architecture

ISSN (O) 2454-9665
ISSN (P) 2454-0663

This paper proposes procurance module.here the resource procurance worth decreses with increase in type of cloud vendors notwithstanding the mechanism. the procurance module implement c-disc c- bice or c-opt to perform resource procurance terribly very cloud computing context for the cloud users a cloud broker with such a shopping for deal module permits users to alter the choice of cloud businessperson among many with varied offering and our system to boot presents dynamic valuation here c-disc c-bice or c-opt mechanism accustomed perform procurance auction. The winners are set and conjointly the payments calculate support mechanism design.

1] The cloud user sends a request for resources to the cloud broker with his budget to buy those resources.

2] The cloud broker after receiving the request from the cloud user forwards that request to multiple cloud vendors.

3] After sending the specifications request to the cloud vendors forwards their budget for the required specification to the cloud broker.

4] Then the cloud broker will perform the three possible algorithms for cloud resource procurement i.e

a] Cloud-dominant strategy incentive compatible (C-DISC)

b] Cloud-Bayesian incentive compatible (C-BIC)

c] Cloud-Optimal(C-OPT)

5] After performing all the algorithms the cloud broker will select the best cloud from the cloud vendor and will send the cloud to the cloud user.

6] After receiving the cloud by the cloud user, the user will check for all the requested applications and resources.

7] And if the cloud user is not satisfied with the cloud sent by the cloud broker, he can request for the cloud to the broker.

8] Then all the specifications are sent to the cloud broker again.

9] Then the cloud broker request the cloud vendors for new budget and the first selected cloud vendor is not allowed to take part in the process now.

10] After the cloud vendor sending the new budget, then the cloud broker re-applies all the three algorithms on the cloud vendor's budget and selects the best cloud and sends it to the cloud user.

11] Accordingly, the cloud user will receive the best cloud from the cloud broker.

3.2 ALGORITHM

3.2.1 C-DISC

C-DSIC: This is a dominant strategy incentive compatible mechanism. It is based on the VCG mechanism. In C-DSIC, the best strategy for a cloud vendor is to bid truthfully. The ratio of cost and QoSis computed for each cloud vendor. The cloud vendor with the lowest ratio of cost to QoS is the winner. The payment rule is based on the VCG mechanism. The user pays the price as per the next lowest bid. C-DSIC is a low-bid Vickrey auction. C-DSIC achieves allocative efficiency (objects are allocated to the cloud vendors who value them most) and individual rationality (cloud vendors get negative payoff if they withdraw from the auction) but it is not budget balanced (there is no external funding in the system). If all cloud vendors use the same probability distribution of price and QoS, then C-DSIC is to be preferred.

International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 04, April 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

Algorithm 1: C-DSIC

Input : Set of bids $\hat{b}_1, \hat{b}_2, \cdots, \hat{b}_n$
Output: Winner and payments for participants $(h_1, h_2, \cdots, h_n)$

$min \leftarrow \infty$;
$winner \leftarrow 0$;
for $i \leftarrow 1$ **to** n **do**
  if $(\frac{\hat{c}_i}{\hat{q}_i}) < min$ **then** $min \leftarrow \frac{\hat{c}_i}{\hat{q}_i}$;
  $winner \leftarrow i$;
end
for $i \leftarrow 1$ **to** n **do**
  // The payment for each cloud vendor
  // i as per (4)
  $h_i(\hat{b}) \leftarrow g_i(\hat{b})\hat{c}_i + \sum_{j \neq i} \hat{c}_j g_j^{-i}(\hat{b}) - \sum_{j \neq i} \hat{c}_j g_j(\hat{b})$;
end

3.2.2 C-BIC

C-BIC: This mechanism is based on the Dagvamechanism. In C-BIC, each cloud vendor contributes a participation fee. This money is used for paying other cloud vendors. Hence, C-BIC is budget balanced and allocative efficient. In this mechanism also, the vendor with lowest cost and QoS ratio is declared the winner. The procurement cost for the user is less here compared with C-DSIC. C-BIC does not satisfy individual rationality but achieves allocative efficiency and budget balance. C-BIC issuitable for government organizations. Generally, the participants in government-sponsored procurement auctions pay a participation fee and this is the accepted practice in them. The loss of a cloud vendor's money in the C-BIC can be viewed as the fee for participating in procurement auction.

Algorithm 2: C-BIC

Input : Set of bids $\hat{b}_1, \hat{b}_2, \cdots, \hat{b}_n$
Output: Winner and payments for participants $(h_1, h_2, \cdots, h_n)$

$min \leftarrow \infty$;
$winner \leftarrow 0$;
for $i \leftarrow 1$ **to** n **do**
  if $(\frac{\hat{c}_i}{\hat{q}_i}) < min$ **then** $min \leftarrow \frac{\hat{c}_i}{\hat{q}_i}$;
  $winner \leftarrow i$;
end
for $i \leftarrow 1$ **to** n **do**
  // Pay each cloud vendor i
  // based on (6) and (7)
  $\xi_i(\hat{b}_i) \leftarrow \mathbb{E}_{\hat{b}_{-i}}[\sum_{i \neq j} c_j(g_j(\hat{b}_i, b_j))]$;
  $h_i(\hat{b}_i) \leftarrow \xi_i(\hat{b_j}) - \left(\frac{1}{n-1} \sum_{j \neq i} \xi_j(\hat{b}_j)\right)$;
end

3.2.3 C-OPT

C-OPT: This mechanism is proposed to overcome the limitations of both C-DSIC and C-BIC. The winner determination and payment rule are different compared to C-DSIC and C-BIC. We compute virtual cost for

International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 04, April 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

every cloud vendor. This virtual cost is used to determine the winner. In our model, virtual cost is a function of cost and QoS. We rank the cloud vendors based on their virtual costs. The cloud vendor with lowest virtual cost is declared the winner. The payment is computed based on the quoted cost and the expectation of the allocation.

Algorithm 3: C-OPT

Input : Set of bids $\hat{b}_1, \hat{b}_2, \cdots, \hat{b}_n$
Output: Winner and payments for participants $(h_1, h_2, \cdots, h_n)$

$min \leftarrow \infty$;
$winner \leftarrow 0$;
for $i \leftarrow 1$ **to** n **do**
  Compute H_i;
  if $(H_i < min)$ **then** $min \leftarrow H_i$;
  $winner \leftarrow i$;
end
for $i \leftarrow 1$ **to** n **do**
  // Pay each cloud vendor i
  // based on (11)
  $h_i(\hat{b}_i) \leftarrow c_i g_i(\hat{b}) + \int_{c_i}^{\overline{c}} X_i(y, \hat{q}_i)dy$
end

3.3 MODULES:

User:

User sent the resources request to Broker with type of price and list of resources.User get response from broker if user satisfied that response then sent the confirmation to the broker and if not satisfied the user then sent the re-request to broker.

Broker:

Get user request for resources broker sent the requirement resources details to all cloud service provide. Broker also get the response from all Cloud Service provider then broker find the winner using C-BIC,C-OPT and C-DSIC algorithm and sent winner cloud service provider details to the User.

Cloud Service Provider:

Gets all request from broker regarding resource, and then cloud service provider sent response to that request in the form of price and details of resource to broker.

3.4 MATHEMATICAL MODEL

Let S be the system object and it consist of

S={I,P,O}

I= Input

P= Process

O= output

I={U,V,B,Q,R}

U= No of Users

V= no of Vendors

B= No of Brokers

Q= User Query

R= Resources

ISSN (O) 2454-9665
ISSN (P) 2454-0663

P={RS,LAC,SC,PA,C-DISC,C-BIO,C-OPT,P,DB}

RS= Resource specification

LAC= List of available clouds

SC=selected cloud on the basis of cost and QoS

PA= Procurement Auction

C-DISC=Cloud-Dominant strategy incentive compatibility

C-BIO=Cloud-Bayesian incentive compatible

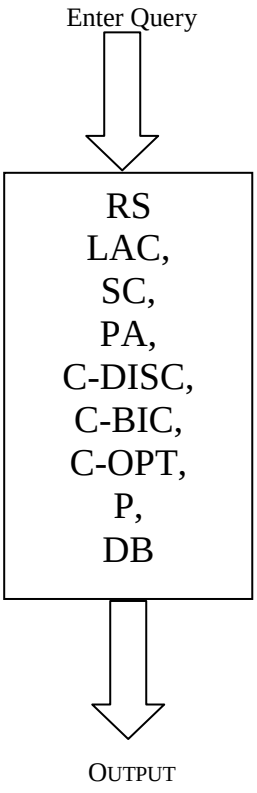
C-OPT= Cloud Optimization

P=Payments

DB= Database

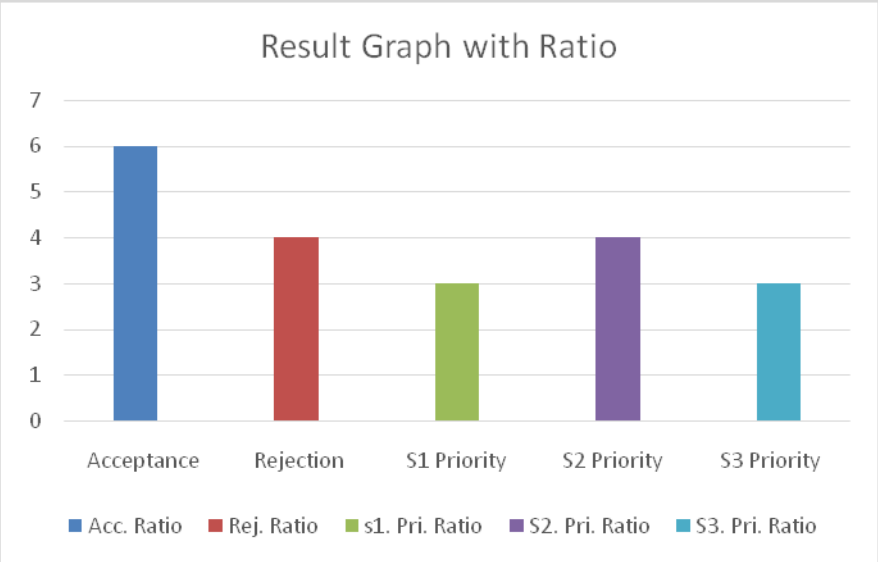
O={Res}

Res= get expected results.



International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 04, April 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

3.5 RESULT



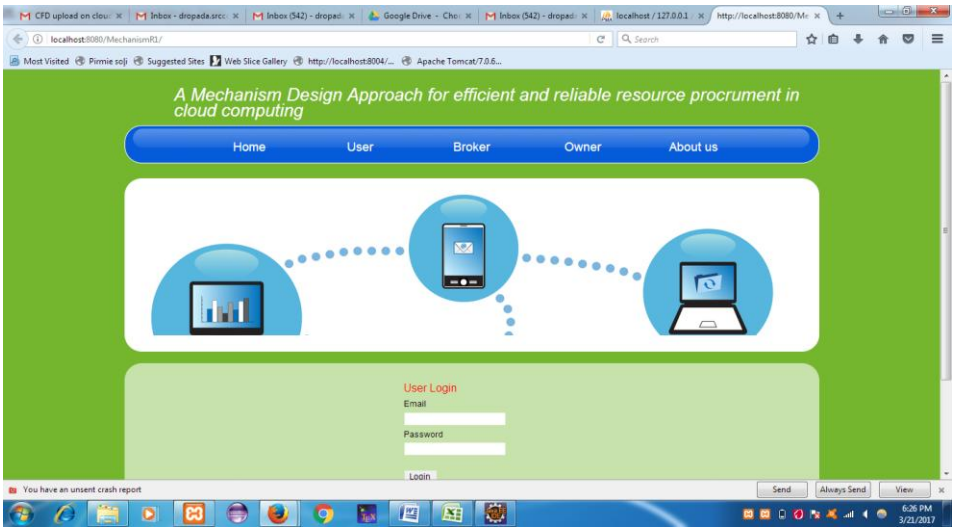
	Acc. Ratio	Rej. Ratio	s1. Pri. Ratio	S2. Pri. Ratio	S3. Pri. Ratio
Acceptance	6				
Rejection		4			
S1 Priority			3		
S2 Priority				4	
S3 Priority					3

C-DSIC, C-BIC, and C-OPT. C-DSIC ar an occasional bid Vickrey cut-rate sale. It's allocating skilled and person objective but not outlay set up adjusted. On the off probability that the system is certainly not plan adjusted, then associate outer organization must offer money to perform acquisition. C-BIC could be a weaker methodology contrasted with C-DSIC and its Bayesian motivating force good. In C-BIC, vendors uncover reality simply if totally different merchants uncover reality, dissimilar to C-Disk wherever merchants uncover reality freelance of others' selections. C-BIC accomplishes outlay set up deed and assigns proficiency but not singular judiciousness. C-OPT accomplish each Bayesian motivating force similarity what is more, singular levelheadedness that the opposite 2 instruments cannot accomplish. This element is immune to each overbidding and underbidding. Within the event that a cloud vender overbids, at that time the motivation is weakened. On the off probability that it underbids, then it would not be a champ. C-OPT is a lot of broad contrasted with each C-DSIC and C-BIC—regardless of the chance that cloud merchant use various appropriations for expense and Quos, we are able to firmly utilize C-OPT. after, C-OPT are the favoured instrument in additional cases during this planet.

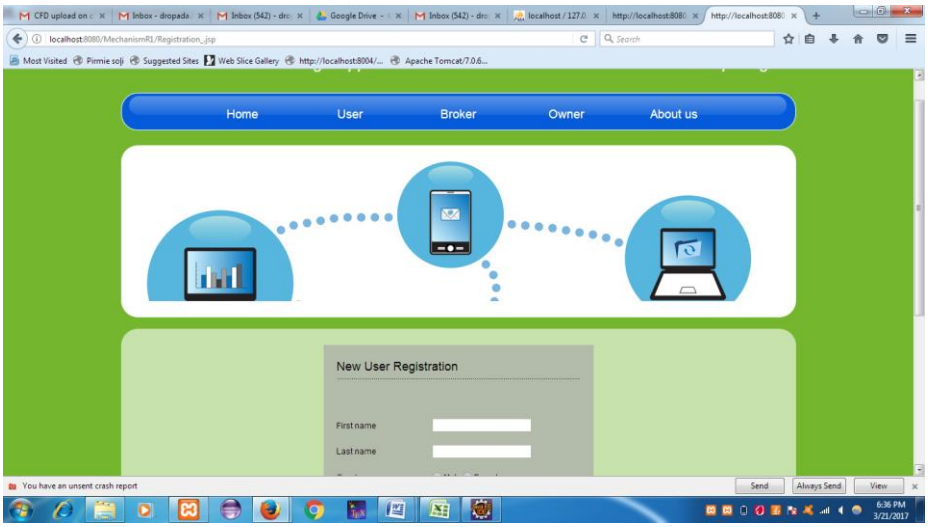
International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 04, April 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

3.6 SCREENSHOTS

User Login



New user registration



Broker login

International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 04, April 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

Cloud service provider login

IV. CONCLUSION

C-DSIC, C-BIC, and C-OPT. C-DSIC are a low bid Vickrey closeout. It is allocating proficient and person objective however not spending plan adjusted. On the off chance that the system is definitely not financial plan adjusted, then an outer organization needs to give cash to perform acquisition. C-BIC is a weaker methodology contrasted with C-DSIC and it is Bayesian motivating force perfect. In C-BIC, vendors uncover reality just if different merchants uncover reality, dissimilar to C-Disk where merchants uncover reality independent of others' decisions. C-BIC accomplishes spending plan equalization and allocate proficiency however not singular judiciousness. C-OPT accomplish both Bayesian motivating force similarity furthermore, singular levelheadedness, which the other two instruments can't accomplish. This component is resistant to both overbidding and underbidding. In the event that a cloud seller overbids, at that point the motivation is decreased. On the off chance that it underbids, then it might not be a champ. C-OPT is more broad contrasted with both C-DSIC and C-BIC—regardless of the possibility that cloud vendor use diverse appropriations for expense and QoS, we can securely utilize C-OPT. Subsequently, C-OPT are the favored instrument in more cases in this real world.

V. ACKNOWLEDGMENT

We might want to thank the analysts and also distributers for making their assets accessible. We additionally appreciate the commentator for their significant recommendations furthermore thank the school powers for giving the obliged base and backing.

REFRENCES

[1] S. Grivas, T.U. Kumar, and H. Wache, “Cloud Broker: Bringing Intelligence into the Cloud,” Proc. IEEE Third Int’l Conf. Cloud Computing (CLOUD), pp. 544-545, July 2010.

ISSN (O) 2454-9665
ISSN (P) 2454-0663

[2] M.F. Mithani, M. Salsburg, and S. Rao, "A Decision Support System for Moving Workloads to Public Clouds," GSTF Int'l J. Computing, vol. 1, no. 1, pp. 150-157, Aug. 2010, doi:10.5176_2010-2283_1.1.25.

[3] B. Rochwerger, J. Tordsson, C. Ragusa, D. Breitgand, S. Clayman, A. Epstein, D. Hadas, E. Levy, I. Loy, A. Maraschini, P. Massonet, H. Mun˜ oz, K. Nagin, G. Toffetti, and M. Villari, "RESERVOIR—-When One Cloud is Not Enough," Computer, vol. 44, no. 3, pp. 44-51, Mar. 2011.

[4] M. Bichler, J. Kalagnanam, K. Katircioglu, A.J. King, R.D. Lawrence, H.S. Lee, G.Y. Lin, and Y. Lu, "Applications of Flexible Pricing in Business-to-Business Electronic Commerce," IBM Systems J., vol. 41, no. 2, pp. 287-302, 2002.

[5] Y. Narahari, C. Raju, K. Ravikumar, and S. Shah, "Dynamic Pricing Models for Electronic Business," Sadhana, vol. 30, pp. 231- 256, 2005.

[6] I. Foster, C. Kesselman, C. Lee, B. Lindell, K. Nahrstedt, and A. Roy, "A Distributed Resource Management Architecture that Supports Advance Reservations and Co-Allocation," Proc. Int'l Workshop Quality of Service, pp. 27-36, 1999.

[7] R. Buyya, D. Abramson, J. Giddy, and H. Stockinger, "Economic Models for Resource Management and Scheduling in Grid Computing," Concurrency and Computation: Practice and Experience, vol. 14, nos. 13-15, pp. 1507-1542, 2002

[8] P. Ghosh, N. Roy, S.K. Das, and K. Basu, "A Pricing Strategy for Job Allocation in Mobile Grids Using a Non-Cooperative Bargaining Theory Framework," J. Parallel and Distributed Computing, vol. 65, no. 11, pp. 1366-1383, 2005.

[9] Ankit Lodha, Clinical Analytics – Transforming Clinical Development through Big Data, Vol-2, Issue-10, 2016

[10] Ankit Lodha, Agile: Open Innovation to Revolutionize Pharmaceutical Strategy, Vol-2, Issue-12, 2016

[11] Ankit Lodha, Analytics: An Intelligent Approach in Clinical Trail Management, Volume 6 ,Issue 5 , 1000e124